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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

Vol. XIX JUNE, 1949 No. 6

SCHOOL HEALTH SERVICES*

John P. Hubbard, M.D., Katherine Bain, M.D.
and Maryland Y. Pennell, M.Sc.Hyg.

Health services for the child of school age have tended to center at the school, first because children are concentrated there and thus can be easily reached, and second because the school situation offers an excellent opportunity for health education. In general terms, the objectives of school health services may be defined as the protection of the health of the child of school age, the development of a health consciousness for the child and his parent, the early detection of impaired health and some sort of follow-up system to assure that defects found at the time of health examinations receive prompt attention.

In order to obtain information in this important field, a study of certain aspects of school health services has been included in the comprehensive, nation-wide study of child health services now completed by the American Academy of Pediatrics, with the cooperation of the Federal Security Agency's Public Health Service and Children's Bureau. At national, state and local levels, facts have been gathered with a definite purpose in mind: to provide the tools with which to improve child health, not only for the country as a whole but for local communities. Therefore, certain of the data have been tabulated for each of the 3,000 counties. The findings of this study are now being reported in summary for the country as a whole[1] and in more detail for the individual states.

It should be clearly understood that the study has not attempted to gather data on all aspects of a complete school health program. Services may cover a wide range. Health education, provision for a sanitary school, environment, control of communicable disease are among the aspects not included in the study.

For the purposes of this paper, the following items have been selected for consideration: (1) the lack of school health services

1Child Health Services and Pediatric Education, the Commonwealth Fund, New York. (in press)

*A report from the American Academy of Pediatrics Study of Child Health Services.

Presented at the Annual Meeting of the American School Health Association, Boston, November 8, 1948.

may be many agencies within a county, covering individual school districts. For health the picture is usually the reverse, a health jurisdiction frequently being made up of several counties. There is, therefore, some tendency for the number of education agencies to be multiplied and the number of health agencies to be reduced in relation to the same areas. Recognizing the limitations of the use of "agency", it is seen in Table 3 that there is a fairly even division between official education and official health agencies. About 11 percent of the agencies have been classed as joint administration by official education and health agencies together.

This pattern is not, of course, the same everywhere. There was a much greater tendency for education authorities to provide the service in metropolitan counties and for health agencies to be responsible in isolated counties. (Table 4)

Frequency and Types of Examinations

Another controversial subject in school health is the frequency with which examinations should be given. We undertook to determine the present practice, that is whether the policy of the agency was to examine (1) all pupils once a year, (2) certain grades once a year, or (3) only referrals by teacher or nurse. Though the practice was divided fairly evenly among these three patterns, emphasis appears to be given by education agencies to examining all children yearly, while the health agencies appear to be more selective in examinations. (Table 5)

Attention was directed specifically to the extent to which children are examined for vision, hearing and tuberculosis. Practically all (91 per cent) of the agencies reported routine testing of vision; only about a half (54 per cent) routine and audiometer testing and about a quarter (26 percent) testing for tuberculosis either by X-ray or tuberculin.* It is a matter of considerable interest that official education agencies demonstrated more concern over testing for vision and hearing than the official health agencies. This is particularly true in respect to the audiometer testing; 76 percent of the official education agencies gave routine audiometer tests in comparison with 28 percent of the official health agencies. In respect to testing for tuberculosis, the score was low for both health and education agencies with the former having a slight edge—28 percent in comparison with 24 for the education agencies. There was a rather even distribution between those agencies which used X-ray examination and those which tested with tuberculin only.

*Annual testing of all pupils, certain grades, or new pupils.

Personnel Active in School Health Programs

Much of the school medical work is done by part-time physicians, either health officers (who may be full-time officers but devote only a part of that time to school work) or practicing physicians who give varying proportions of their time to the schools. In adding together all the physicians giving school medical service, equal weight was given to a man devoting full-time to the job and one giving one hour per week. Nor was it possible to obtain a completely unduplicated count. If a health officer or practicing physician served more than one agency, he is undoubtedly counted more than once. No way out of this dilemma was found.

Of the 8,000 physicians serving in the schools, about 20 percent were health officers. The percent of health officers working in the schools is comparatively small in metropolitan counties, increasing as one goes out from these centers to the isolated rural counties. In the greater metropolitan counties 3 percent of the physicians were health officers in comparison with 59 percent in isolated rural counties.

About 42 percent of the total physicians were employed by the official education agency in comparison with 25 percent by the official health agency. The remaining one-third were employed by the official health and education agencies jointly.

Of the large majority of these physicians who were not health officers (6,390), 94 percent were general practitioners and 4 percent pediatricians. Thus the pediatrician plays a relatively small role in school health programs.

About 11,700 nurses gave some time to the schools, usually as a part of a general public health program. Somewhat over one third (38 percent) of these nurses were employed full-time to work in the schools. About 40 percent were employed by the official health agency; only slightly less being employed by the official education agency; and most of the rest being employed by official health and education agencies jointly. Again we find the southeastern region at variance with the practice throughout the country as a whole. In this region the large majority (85 percent) of the school nurses are employed by the official health agency.

Conclusion

In closing, it should be pointed out that the information presented here is only in the nature of a general summary of the data collected during the course of this study in relation to school health services. More complete data will be found in the national report already referred to and in the reports of the study being published separately by the individual states.

TABLE 1

Counties without organized medical service in public elementary schools, and children age 5-14 years in those counties (1946)

County group:	*Total counties*	*Counties without service*		*Total children*	*Children in counties without service*	
		Number	*Percent*		*Number*	*Percent*
Greater metropolitan	63	2	3%	5,036,774	31,312	1%
Lesser metropolitan	177	23	13	5,291,917	335,360	6
Adjacent	668	306	46	3,634,300	1,167,250	32
Isolated semi-rural	1,116	494	44	5,896,405	2,101,931	36
Isolated rural	1,052	720	68	2,137,017	1,295,539	61
Total	3,076	1,545	50	21,996,413	4,931,392	22

TABLE 2

Listing of states according to the proportion of child population (5-14 years) in counties having no organized medical service in public elementary schools

0 *Percent*	1-14 *Percent*	15-29 *Percent*	30-49 *Percent*	50 *or more Percent*
Connecticut	California	Alabama	Arizona	Arkansas
Delaware	Louisiana	Florida	Colorado	Georgia
Massachusetts	Maryland-D. C.	Illinois	Kansas	Idaho
New Hampshire	Michigan	Indiana	Kentucky	Iowa
New Jersey	North Carolina	Mississippi	Maine	Minnesota
New York	Ohio	Nebraska	Missouri	Montana
Pennsylvania	Oregon	New Mexico	Tennessee	Nevada
Rhode Island	Utah	Oklahoma	Virginia	North Dakota
	Vermont	South Carolina	West Virginia	South Dakota
	Washington		Wisconsin	Texas
	Wyoming			

TABLE 3

Agencies giving school medical service

	Number	*Percent*
Official education	1,271	45%
Official health	1,173	41
Joint official education and health	323	11
Other	84	3
Total	2,851	100

TABLE 4

Percent of agencies by sponsorship in each county group

	Official education	*Official health*	*Joint official education and health*	*Other agencies*
Greater metropolitan	69%	9%	17%	5%
Lesser metropolitan	63	23	11	3
Adjacent	50	34	12	4
Isolated semi-rural	28	61	9	2
Isolated rural	16	71	10	3

TABLE 5

Frequency and types of examinations by different sponsoring agencies

	All agencies	*Official education*	*Official health*	*Joint official education and health*	*Other*
Medical examinations:					
All pupils once a year	36%	64%	10%	22%	40%
Certain grades once a year	41	26	53	56	40
Only referrals by teacher or nurse	23	10	37	22	20
	100	100	100	100	100

*Annual testing of all pupils, certain grades, or new pupils.

NUTRITIONAL APPRAISAL OF NEW YORK STATE SCHOOL CHILDREN*

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The problem of evaluating the nutritional status of population groups is a difficult undertaking. There is widespread interest in such studies and a considerable number of investigations have been made during the last decade relative to determining nutritional status. Many of the studies which have been made have involved laboratory research, detailed dietary histories, and physical examinations. In general it has not been feasible to apply the methods used in such research studies to the practical and important problem of estimating the nutritional status of large groups of people.

The New York State Food Survey has been an attempt to apply practical methods of investigating an important public health problem, namely, nutritional conditions that exist within the State of New York and that may be expected to influence the nutritional status of the people and, hence, the public health. And, what is also important, to carry this study out largely by using existing departments and agencies already familiar with the community and the state organization is an aspect of the study worth mentioning. The project was planned as a cooperative effort of many New York State and New York City departments, public and private agencies, two universities having departments of home economics and nutrition, and the Harvard School of Public Health.

A committee from the New York State Food Commission with the assistance of the Nutrition Department of the Harvard School of Public Health, the Institute of Nutrition of Cornell University, and the New York State and City Health Departments planned the broad aspects of the program. Another committee consisting of nutritionists and public health nurses from the New York State and City Health Departments, scientists from the Institute of Nutrition at Cornell, and consultants from the Harvard School of Public Health worked out the specific survey plans. This committee contacted the agencies and departments that were asked to participate in the study. One nutritionist in charge of the study was employed full-time for approximately eight months. Three consultants including a nutritionist, a public health nurse, and an economist with nutritional and statistical experience, helped with the project for several weeks. Seven physicians participated in the physical appraisal of school children.

*Read before the American School Health Association, Boston, Mass., November 8, 1948.

State Departments having personnel that participated in the project included the Division of Maternal and Child Health, Bureau of Nutrition and Office of Vital Statistics of the Health Department, the Department of Labor, the Department of Commerce and the Department of Education, also the Division of Nursing and of Nutrition of the New York City Health Department, various private and public visiting nurse associations, State Extension Service, and the Nutrition and Home Economics Departments of Cornell University and Syracuse University.

It was generally agreed that it was not possible or practical to attempt a random sample of the State of New York, but to choose stress groups such as school children and pregnant women. Other groups easily available for study included industrial workers, homemakers, club women, and families from low rental areas.

The methods used in the study were of two general types:

(1) The determination of foods eaten as shown by diet records, interviews, questionnaires, and family purchase records.

(2) Physical appraisals of pupils from selected schools. The survey was conducted between December first to fifteenth, 1947.

The general survey plan, insofar as it involved children, the number of records obtained, and the agencies and departments participating in the study are shown in Slide No. 2.

The report that follows gives the analysis of food records and physical appraisals of school children.

Selection of the Sample

School children are particularly convenient to include in a nutritional study. They are accessible, they are in groups of similar ages, and in the larger city schools can be classified according to the economic level of the population which they serve and according to racial predominance. Secondary schools may be grouped as academic and vocational. Personnel able to assist with the survey such as teachers, home economic supervisors, cafeteria managers and school nurses are available.

The information relating to the food practices of New York Public School children was derived by analyzing approximately 10,000 three-day diet records. A total of 3,561 physical appraisals, 1,195 from the first grade, 1,126 from the fourth grade, and 1,240 from the tenth grade were secured.

Fourth grade children were chosen to contribute diet records since they were the youngest group that could write legibly. The tenth grade represented the adolescent group. The size of the sample was not based upon the school population but upon the number of records which might show a trend and which could

be analyzed statistically with the available help. A total of 9,543 public school children submitted three-day diet records. This represented 0.5 per cent of the school registration, based upon the 1943-1944 census. The fourth grade diet records numbered 4,881 or 3.4 per cent of the fourth grade census and the tenth grade diet records totaled 4,662 or 2.7 per cent of the tenth grade registration. In New York City the schools were selected on a racial and economic basis. The elementary schools were classified according to the average income of the districts which they served as low, medium, or high. The secondary schools were divided into academic and vocational.

In selecting schools in the Upstate area, an attempt was made to obtain a representative cross section of schools with regard to type of population served, i.e., city schools, those suburban to large cities, and village and rural schools from various parts of the state. Not every county was represented, but every main division by both urban and rural schools was included.

The actual selection of schools was done in consultation with the State Department of Education. At least three schools were selected from each of the large cities on the basis of the general economic status of the population served by the schools. In the smaller cities, all of the schools were asked to cooperate.

The registration in the fourth and tenth grades of most of the schools selected was known, so that sufficient schools were chosen to represent about 5,000 children in the Upstate area distributed according to size of place in approximately the same proportion as the total population Upstate at the 1940 census. Exact correspondence could not easily be obtained because of the desirability of choosing schools from several small cities and villages, and the impracticability of selecting a sample of children from these schools. Also, some of the schools failed to cooperate. The general result was an under-representation of children in cities of 100,000 or more population and an over-representation of children in places 2,500 to 10,000. The high school sample is somewhat less representative than the fourth grade, due to the fact that one of the large city high schools failed to report, and that while in some of the medium sized cities only certain elementary schools were selected, all of the tenth grades in the high schools of these cities were surveyed.

Methods

Booklets for keeping diet records were distributed to the school children a few days before the records were to be made. The children were asked to record everything that they had eaten or

drank for three days—Tuesday, Wednesday, and Thursday. Instructions to the children were included in the booklet. Additional instructions were sent to the teachers. Information such as age, sex, school and occupation of the principal wage earner was recorded in the booklet.

The material from the three-day diet record was tabulated for total protein, animal protein, non-animal protein, milk (including milk products and cheese), meat (including fish and poultry), legumes, breads, and cereals, potatoes, fruits and vegetables high in ascorbic acid, fruits and vegetables high in carotene, and total servings of fruits and vegetables. Milk was recorded in cups. Foods in mixed dishes were approximated according to coding direction.

The three-day diet record was recorded on a three-day basis and an average for one day was calculated. The subjects have been grouped according to area, i.e., entire state, New York City, and Upstate New York. Children from Upstate New York were classified according to the population concentrations of the community in which they live. Fourth grade children from New York City were grouped by the average income of the area in which the schools were located, as low, medium, and high income. Tenth grade records were sorted according to academic and vocational schools. The data for fourth grade boys and girls were combined but in the tenth grade were reported separately.

In this report the consumption of total protein, cups of milk, servings of meat, servings of fruits and vegetables high in ascorbic acid and high in carotene are reported.

Physical Appraisals

First, fourth, and tenth grade pupils were appraised. The pupils were selected from the larger cities because of the ease of accessibility and the limited time available for the study. New York City schools were unable to participate extensively in this part of the project. One of the larger schools where physical appraisals were done failed to take part in the diet record program. Because of the difference in the sample, it was impossible to correlate the physical appraisals and diet records effectively.

The physical appraisals were not detailed physical examinations. They represented the impressions of a pediatrician or physician, trained to include nutrition in his diagnostic thinking, as to whether the child appeared to be in good health. If the child did not appear in good health, particularly in good nutritional status, the apparent reason was indicated. Each lesion was given a number, and as the examining physician called the number, it was

recorded by the teacher or clerk. We allotted approximately one half minute for each appraisal, but it only takes a few seconds to form an opinion of whether a person is in good health—and I would hasten to mention that such a hasty opinion may later prove to be wrong.

Results

The physical appraisals were carried out on children in New York City, Binghamton, Syracuse, Utica, Albany, and Buffalo, and involved a total of some 3,500 children. Roughly 50 per cent of the children showed some physical lesion which may or may not have had nutritional significance. Poor dental hygiene and carious teeth constituted the principal defect. Approximately 10 per cent of the children showed lesions which were perhaps more definitely suggestive of some degree of poor nutrition.

A total of 9,543 three-day diet records of the New York Public School children were collected and analyzed. Fourth grade pupils submitted 4,881 records and tenth grade pupils 4,662. The mean age of the fourth grade pupils was 9.2 and 15.4 for tenth grade boys and 15.2 for tenth grade girls. The next slide summarizes the data obtained from the diet records.

Discussion

All survey methods present data which may be criticized on various scores. The written food records obtained in this study are of course approximations, and the magnitude of the errors in some of the records is undoubtedy great. Perhaps the errors of omission and commission are nearly equal, but the records indicating low intakes are more pertinent in a nutrition survey than those which are above average. The values obtained for these represent both those actually low and those which were inaccurately above average. The values obtained for these represent both those actually low and those which were inaccurately recorded. No estimate of the relative importance of these two possible reasons in producing the values obtained is available.

Similarly the evaluation of the data presents obvious difficulties. The evaluation of certain foods in servings only instead of in actual weights or units of the nutrient being studied may be justified since it simplifies the evaluation of the data, and, considering the marked variation in vitamin content of fruits and vegetables, is probably adequate. The National Research Council Recommended Allowances are sufficiently high that they can scarcely be reached unless the protective foods are included in the diet. The selection of appropriate standards is also difficult.

The standards used in this study were based upon the allowances recommended by the National Research Council. Inasmuch as these allowances are intended to serve as a guide to include the needs of all types of individuals, a margin of safety was established to cover those persons who may have higher requirements. Thus the allowances are undoubtedly higher than the actual needs for some of the persons.

A study based on the food practices of populations should not be used as a sole criterion for judging the state of nutrition; it does provide information on food patterns which do influence the nutritional status and hence the public health of the people.

Inasmuch as the mean values obtained are probably quite accurate representations of food intakes and the error in subsequent surveys should be in the same direction and of the same magnitude as those in this study, such surveys of food records or interviews should be of considerable value as measures of changing food habits as affected by prices, income levels, food availability, and health education programs.

Summary

Diet records of fourth grade and tenth grade pupils of the public schools in the State of New York have been analyzed for the amounts of protein, milk, meat, and the number of servings of fruits and vegetables high in ascorbic acid and high in carotene. Physical appraisals have been conducted on first grade, fourth grade, and tenth grade pupils.

Elementary school children exhibited better food practices than did those of the secondary school. Adolescent boys made a better selection of food than did adolescent girls. Children from the high income elementary schools showed greater percentages consuming protective foods than did those of the low and medium income schools. Academic schools likewise had more children meeting the standards than did the vocational schools. Children from New York City showed food practices superior to those of Upstate New York. Excluding dental defects, approximately 10 per cent of the children showed lesions which were suggestive of poor nutrition.

Conclusion

In conclusion I should like to mention that the data of this study were obtained by methods within the reach of the established agencies of most states and provide information valuable to those responsible for public health.

USE OF CHILD-HEALTH CONFERENCE FOR TEACHING HEALTH AND CHILD CARE IN HIGH SCHOOL

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The grouping of school health activities into spheres, health services, health instruction and the provisions for a healthful environment is excellent for program planning and contributes to administration. There are disadvantages, however, chief of which is the danger that people working in one of these areas may overlook opportunities for cooperation in the others. Just as the departmentalized curriculum in many schools obscures the view of the child as a person, so the convenient assignment of specialized responsibilities within the school health program threatens to weaken the overall objectives.

Fortunately, most of us can think of a number of instances where this narrowing of interests has been overcome. Teachers participate in the health service program by referring children for examination and by encouraging class discussions of physical examinations and testing programs. Teachers, doctors and nurses share with the administrator responsibility for a healthful environment. Teachers base health teaching on the children's needs as shown by health service records. These are only examples of many ways in which departmentalization has been broken down.

There will be described here a way by which an interesting and worthwhile learning experience for high school pupils has been provided by the health service staff through the establishment of a child-health conference in the school during school hours, as part of the curriculum.

Child-health conferences (well-baby clinics, well-child conferences) are a well recognized health activity in almost every community. Most of you are familiar with the purposes and operation of these conferences.

The primary aim of the conferences is an educational one. Parents who could not otherwise obtain health supervision for their children without hardship receive advice on child care and development and have opportunity to voice their problems. The children are examined at intervals and immunizations are given at the proper time. When the need for treatment is found, help is given to the parents in finding the proper resource in the community.

It seemed to us that a well-child conference could provide a

number of interesting and meaningful experiences for high school pupils. Since the conferences have proved their value for parents of today, why would there not be a similar or even greater value in sharing the experience with the parents of tomorrow.

A conference was started, on a small scale, in the Fall of 1947, once each week for two hours in the afternoon. There was some difficulty connected with getting mothers and infants to attend the conference. We did not have enough confidence in the venture to make us willing to start a new child-health conference in the city-wide program. The problem was solved when the University established a housing project for married veteran students.

Two of the criteria for acceptance in the Project were minimum income and a family, which made them ideal for us. Our plan for a child-health conference met one of their chief needs and a cordial relationship was established and has become closer all the time. Except during vacations, the conference has been held each week and the average attendance has grown from four children to twelve. There are 300 families in the Housing Project now, and the demands for service at our conference threaten to crowd out the original purpose of providing a teaching situation for high school pupils. We now accept only infants under two months of age and there is a waiting list of unborn babies. Even so, we have had to obtain the help of another pediatrician so that the interviews and examinations could be leisurely enough to be worthwhile for our pupils.

Participation in the conferences has been elective for tenth and eleventh grade pupils. Twelfth grade students would appear to be the ideal group but the schedule for high school seniors is too full for a new activity. Both boys and girls have been encouraged to take part in the child-health conference and a few boys have dropped in for short visits. They like to help in moving furniture and running errands, but interest in the conference has been very slight. There is a cultural reason for this, apparently, since child care is traditionally a woman's task, but we also believe that boys of 16 and 17 have not developed to the stage where an activity such as this has any significance to them. Girls can more easily project themselves into a future role of motherhood than high school boys can visualize themselves as fathers.

As an elective activity, for which they are excused from physical education class, about eight girls assist in the conference each week and are able to return every 5 or 6 weeks. There are, therefore, about forty girls in the program and we have a reserve list

of senior girls who beg to come when there is an unexpected vacancy.

The girls report a short time before the conference begins and are briefed in their duties by the nurse. The importance of guarding any personal information they may hear is stressed. The pupils take the place of voluntary assistants in the usual child-health conference. A girl greets each arrival to the conference and remains with that family until their departure.

Perhaps the most meaningful experience the pupils have is listening to the interviews between the parent and the nurse and physician. Let me review the general subjects which are discussed so that you may imagine for yourselves the wealth of topics touched upon during the interview. Before going into this list, it will be well to remind you that after the conference, the pupils, the nurse and the physician have a group discussion to talk about any subject the pupils wish to pursue further. More of this part of the program later.

The regular interview with parents covers the following topics: Family medical history; history of the pregnancy; date of blood test for syphilis; description of labor; condition of infant at birth; physical and social development of the infant; diseases or illnesses; habits of sleep, diet, toilet-training, etc., parental attitude toward the child; immunizations. The mother is then asked to tell us about any problems she may have, so that specific help can be given.

After the interview the infant is completely undressed for weighing, measurement and examination at each visit. This stage of the conference incidentally was originally view as being potentially the most valuable experience the conference could provide, especially for pupils who have no siblings of the opposite sex. The pupils are given a chance to handle the babies and to dress them. There has never been any embarrassment for anyone except once when a mother told a friend we shouldn't have undressed her 18-months-old boy in the presence of a high school girl!

Immunizations for smallpox, diphtheria, whooping cough and tetanus are given at the proper time. Changes and additions to the diet are made and the child's development is discussed.

In considering the various experiences these pupils have had in the conferences, it would be difficult to list all the health topics touched upon and opened for further discussion. However, I feel confident in stating that every pupil hears a discussion of these matters, at least:

Nutrition, both with respect to the child and the rest of the family.

Infectious Diseases and *Immunization.*

*Child Development.**

Mental Hygiene.

Cleanliness and Sanitation in the preparation of foods.

Care of the teeth.

Pregnancy and childbirth.

It is more important, I think, that these topics are discussed at a "teachable moment" when the reasons for good health practices are easily observed.

Concern for the scope and content of teaching is very proper and these conferences offer an excellent situation for teaching. However, it seems to us that there is in these conferences something more important in that a challenging technique for encouraging young people to express their needs is found.

It is obvious that a discussion of the problems of another person is easy and unrestrained because the personal implications are removed. It was easy for a girl to say, in a group, "Do you think Johnny's mother ought to stop nursing him?" Or again, "How did that mother know she should go to the doctor to have a blood test taken?" What this girl really wanted to know was how the woman knew she was pregnant. Admittedly, information such as that should be known before the tenth grade is reached, but there will always be some who need the right facts at this age.

On the day after the conference the pupils meet again with the nurse and the physician, if he can arrange it, to talk over any matter which the pupils wish to discuss. A complete list of the topics would be impossible to give you because the trains of thought take some odd turns. However, I have kept a list of the most common and the most interesting subjects the groups have talked about:

The advantages of breast-feeding infants; the need for vitamins; the spread of infections; the effectiveness of immunization; proper interval between pregnancies; anaesthetics during childbirth; reasons for circumcision; the effect of parents' attitudes and the home environment on a baby's disposition; the good fortune of a baby whose parents are very fond of each other; the favorable impression made on everybody when the father comes to the conference with the mother and child.

*Recently this field has been included among the electives in the Home Arts Department, with enthusiastic response.

Very recently Miss Katharine Lenroot said, "Preparation for parenthood and for the responsibilities of citizenship must be regarded as of equal importance with preparation for vocational or professional pursuits."*

If this mandate is accepted, and certainly it would be by most people, all available technics and situations should be used for teaching. One such source for experiences has been described. We would recommend that well-child conferences in the communities be made available for high-school student participation and that the educational opportunities for them be developed to the same degree as has been done for parents who use the conferences. The children of the next generation would thank us for it.

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ANNUAL MEETING
NEW YORK STATE ASSOCIATION OF SCHOOL PHYSICIANS
LAKE PLACID, N. Y. — MONDAY, JUNE 20, 1949
HIGH SCHOOL AUDITORIUM

9:00 A.M. Executive Committee Meeting
10:30 A.M. Annual Business Meeting and Election of Officers
2:00 P.M. GENERAL SESSION
Presiding:
JESSIE L. WELLS, R.N.
President of N. Y. State School Nurse-Teachers Association

Presidential Address.....C. Adele Brown, M.D., Oswego
Developments in the Division of Health and Physical Education, State Education Department.....Lillian DeArmit, M.D., Albany
Endocrine Disturbances in School Children.....A. Wilmot Jacobsen, M.D., Buffalo
Experimental Work in Absence Attendance Supervision.....C. A. Greenleaf, M.D., Olean
Patch Testing for Tuberculosis

8:00 P.M. GENERAL SESSION
Presiding:
C. ADELE BROWN, M.D.
President, N. Y. State Association of School Physicians

Legal Questions in the School Health Program.....Charles A. Brind, Counsel State Education Dept., Albany
Common Skin Diseases in School Children.....Leon H. Griggs, M.D., Syracuse

*Lenroot, Katharine, "Children in a Free Society," *The Child*, July 1948, page 2.

Nutrition, both with respect to the child and the rest of the family.

Infectious Diseases and *Immunization.*

*Child Development.**

Mental Hygiene.

Cleanliness and Sanitation in the preparation of foods.

Care of the teeth.

Pregnancy and childbirth.

It is more important, I think, that these topics are discussed at a "teachable moment" when the reasons for good health practices are easily observed.

Concern for the scope and content of teaching is very proper and these conferences offer an excellent situation for teaching. However, it seems to us that there is in these conferences something more important in that a challenging technique for encouraging young people to express their needs is found.

It is obvious that a discussion of the problems of another person is easy and unrestrained because the personal implications are removed. It was easy for a girl to say, in a group, "Do you think Johnny's mother ought to stop nursing him?" Or again, "How did that mother know she should go to the doctor to have a blood test taken?" What this girl really wanted to know was how the woman knew she was pregnant. Admittedly, information such as that should be known before the tenth grade is reached, but there will always be some who need the right facts at this age.

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SUMMER SCHOOL ANNOUNCEMENTS

School and Location and Dates of Session	Course Content in General	Address for Further Information
U. of Calif., Los Angeles June 20-Aug. 13 (regular session)	Graduate and undergraduate work in physical education, health education and recreation	Summer Sessions Office 405 Hilgard Ave., Los Angeles 24
Yale, U., New Haven Conn. June 27-Aug. 5	Graduate seminar in school health education for elementary and secondary school teachers; workshop techniques	Charles C. Wilson, School of Public Health
Indiana U., Bloomington Aug. 12-26	Workshop in school and community health education for school, public health, voluntary agency personnel, lay workers	W. W. Patty, Indiana U.; Robert Yoho, State Bd. of Health, 1098 W. Michigan St., Indianapolis
U. of Chicago, Chicago June 28-July 29 Aug. 1-Sept. 3	Advanced work in nursing education for nurses training to enter institutional positions or public health	Nursing Education Office
State Teachers College Cortland, N. Y. Aug. 15-27 (post session)	Graduate workshops in curriculum construction in health education and outdoor education at camp	Director, Summer Session
New York U., Lake Sebago Camp July 5-Aug. 12 (summer session)	Graduate courses in health, physical education, recreation; special courses in dance, sports, methods, research procedures	Jay B. Nash or Morey R. Fields, Dept. of Physical Education, Health, Recreation
New York U., N. Y. C. Aug. 15-Sept. 9 (post session)	Health education institute; school and community problems in tuberculosis education	
Syracuse U., Syracuse, N. Y. July 5-Aug. 12	Course in principles and problems of health agency work	John H. Shaw, Dept. of Athletics & Physical Education
Kent State U., Kent, Ohio, Aug. 8-19	Workshop for graduate students in health education school	Frank Ballenger, Dept. of Health and Physical Education
U. of Cincinnati, Cincinnati, Ohio June 17-July 23 (first session)	Methods and materials in health and physical education, organization and administration	Dean
June 20-25	Health education institute in methods and materials in health education; health education work conference on health problems	of
June 27-July 2	Social hygiene institute on education for family life and counseling on marital problems	Summer
July 5-9	Mental hygiene institute on responsibility of family, schools, and communtiy in mental health education, social hygiene work conference on social hygiene problems	School
Miami U., Oxford, Ohio June 13-24	Work conference on community health education	Director, Summer Session
Pennsylvania State Col., State College June 6-24 (intersession) June 27-Aug. 6 (main session) Aug. 8-26 (post session) Aug. 29-Sept. 17 (extra session)	Camping, administration, athletic coaching, health education workshop, community recreation, research, intramurals, safety education, dance, tests, and measurements	Director, Summer Sessions
Texas State College for Women, Denton June 8-July 20 (first session)	Health education workshop in collaboration with Kellogg Foundation	Anne S. Duggan, Dept. of Health, Physical Education, and Recreation
U. of Washington, Seattle June 20-Aug. 19	Graduate and undergraduate courses in administration of recreation; kinesiology; first aid and safety; principles; school health education	Summer quarter office, R. E. Belshaw; Ruth Wilson, Dept. of Physical Education

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EDITORIAL

Sit lux

In the April, 1949, issue of a magazine of wide circulation, is an article entitled, "Condemned to Neglect". It deals with the school health services in the United States.

This article is so largely untrue, so loaded with innendo verging on the border line of purposely grandstanding that we feel it must be answered with the facts, so that thereby we may give some relief and support to the communities—and to their public officials—which have been so unjustly criticized.

Presumably the intent of the article was to help to bring about improved conditions and greater accuracy in the physical examinations made of children at school. Perhaps it will in some areas, but it has aroused such a feeling of anger and resentment that in those areas criticized much of the confidence in the value and accuracy of semi-scientific articles in lay magazines will be largely destroyed.

Let us look at some of these errors.

"Though New York City doctors take forty minutes for each examination" . . . In the New York City public schools there were, as of April 25, 1949, 832,450 children, and in the parochial schools 272,389 more; a total of more than 1,100,000. Since the school health service in that city is administered by the City Health

Department, it is probable that *all* the children are given this physical examination, both public and parochial. With characteristic looseness of statement the article does not say how often these examinations are made. Please do a little arithmetic. How many school physicians would be needed, working a minimum of five hours per day, one hundred eighty school days per year to make them even once in two years, which probably is often enough in routine cases? Does New York City have that many publicly employed physicians devoting all their time to making physical examinations on school children? We do not know. A request for this information went into the hands of the City Health Department via a Board of Education administrator more than a month ago. No reply from the Board of Health has been received by us.

As a matter of fact, a statement appeared a few months ago in the Journal of the American Medical Association that under the reorganization for physical examinations of school children in New York City *twenty* minutes was allotted to each examination. Which is more nearly correct, the propaganda statement in the article or the report in the Journal of the A.M.A.?

The article states that twenty years elapsed after school medical inspection began, 1894, before educators began to wonder if this was enough. The written history of the development of school nursing and of its purposes in sociological and educational phases of school health shows that only eight years elapsed before New York City took steps to add health service to the medical inspection, the first school nurse being employed in 1902.

Omitting discussion of the extravagant statements as to the quality of the physical examinations, let us look at the falsity of some of the statements regarding certain cities and areas.

The statement regarding conditions in Chicago is extreme. Moreover the physical examinations in Chicago—as in New York City—are controlled by the Board of Health. A prominent Chicago public school administrator writes us—"the situation mentioned in 'Condemned to Neglect' is grossly exaggerated."

The statement that the Highland Park Schools—Michigan—did not have nursing service: The Superintendent of Schools of that city writes us—"This is an erroneous statement. Considering the type of health program we have in the Highland Park Schools, the statement was really ridiculous."

From the Chief, Bureau of Child Hygiene, Department of Health, State of Maryland: "A broad gauged total school health program is under way in each of the counties. . . . the statement

which you quote from the above mentioned magazine is definitely not in accord with the true facts."

The statements regarding the situation in Los Angeles are also false. There is no quarrel going on between the school health service of the Board of Education and the local Board of Health. There is no duplication of service in the sense that representatives of both Boards are working in the *same* school. It is true in Los Angeles, as in many other cities, that the Board of Education handles the health service of the public schools, while the Health Department handles it for the parochial schools. This is a rather common practice, and is made necessary by the fact that in many states the law forbids public education funds to be spent for private schools.

We have information that the statement about North Carolina that "school doctors average forty exams in forty minutes" was not submitted to the State Health Officer for either confirmation or refutation. What kind of an investigation is it when the responsible officials are not given such an opportunity.

And finally, the statement that Tucson, Arizona, has no school physician. The Tucson Superintendent of Schools writes that "The article . . . was quite erroneous". The best testimony as to how erroneous is presented by the following parent-written letter—a clipping from the Tucson Star.

"Editor, The Star:

According to recent publicity (advertisement enclosed herewith for your reference)—a prominent magazine is publishing an article on the health of school children, in which Tucson children, among others, are cited for pity because of lack of adequate public school health examinations.

Our daughter has attended Tucson public schools (three) for seven years. We have had reports from the first grade, right through her entrance into junior high school, with detailed recommendations as to any need or any facilities for special "follow-up," concerning ocular, dental or lung checks. Certificates for oral hygiene have been awarded at the end of elementary terms. A visiting nurse has checked reports of any communicable disease by personal inspection before return to school was permitted, and an O. K. from the school nurse seems demanded always before admittance to classes after an absence for illness. There was no admittance to junior high until after a very comprehensive "going-over," with comparison of physical progress made from year-to-year records. Permission to participate in gym classes was withheld until certification was forthcoming from our family physician —not because of any obvious incapacity, but due to a suggestion that some undefined dust allergy might be causing infrequent colds. The school examiner found time to consider each notation in this seven-year record, despite the case histories of seven hundred other children awaiting and receiving like attention. I saw many of these others being looked over and the process was just as searching. This, with Tucson's schools jammed beyond safety!

Please clarify this situation for us. Is there anything unusual in the excellence of attention given our child? Is it not typical of the local custom? If not, why? And what ought we parents to accomplish in order to insure such thoroughness becoming a matter of course?

If this procedure is standard, in Tucson, and rare elsewhere, recognition must be overdue the workers who accomplish it; let alone the skill of the devisors of such a program. Such a misapprehension, if such it be, as April issues are placing nationally on newsstands is shoddy return of top-grade public service. Can it be possible that such a misapprehension has occurred because Tucson has found a method of implementing a vital phase of social welfare without special bureaus or legislation? If so, the taxpayers deserve the unique comfort of hearing what a true bargain their tax dollars are buying. If not so, what are the required remedies?

Very truly yours,

Mrs. William C. Jones, Jr.
1400 East Lester Street.

Perchance this parent merely dreamed about this fine school health service to her daughter.

Several questions about this article need answering.

What was its real purpose?

If it was instigated wholly for the purpose of bringing about better health services in the schools was it necessary to load it with falsehood, misrepresentation and innuendo?

Who instigated the "slant" of the article?

Who gave out so much false information from so many areas, or did the falsehoods come almost wholly from one source?

There is a group of active propagandists in this country using strenous efforts to stir up criticism of and antagonism against the prevailing type of administration of school health services by Boards of Education, the object being apparently to get the control of these services into their own hands. In a number of areas they make little effort to conceal their objective.

On what basis did the expert place the leading sentence of her, "an expert comments", that "this article on one important aspect of child health is based on a firm foundation of fact." Of course we are familiar with the fairly common attitude of mind of the New York City denizen,—that nothing worthwhile happens east of Brooklyn or west of the Hudson, but this is a bit too much.

Someone wrote us that the article "Of course is propaganda." Propaganda or prevarication—and the words are "sisters under the skin." Someone gave out a mass of misinformation, which was accepted with little apparent effort for verification.

et lux fuit.

C. H. K.

ABSTRACTS

Dental Health in Health Education for Secondary Schools,— *Leon Kramer.* Journal of the American Association for Health, Physical Education, and Recreation 20:85, February 1949.

Dr. Leon Kramer, dental chief of the Kansas State Board of Health, writing in the February 1949 issue of the Journal of the American Association of Health, Physical Education, and Recreation, presents nine points as an outline for guidance in establishing and operating an adequate program of dental health education on the secondary school level.

Using the present status of dental health among high school students to show the need for dental health education, Dr. Kramer emphasizes that all recent surveys show this to be an extremely vulnerable period in child life.

In logical sequence, questions on such issues as how dental health can be recognized, what dental caries is, what effect general health and nutrition have on caries and what may result from promoting oral hygiene in the prevention of caries are taken up. Each question is answered simply and factually and they lead to point six in the outline which deals with the implementation of a dental health program for high school students.

Point six is presented as a question and asks "what should a dental health program for high school students comprise?" The answer follows:

"The dental health programs promoted by schools, health agencies and other interested groups provide dental education and care for the younger child. For the high school student, the selection of a private dentist, and making visits on the concept of complete treatment followed by visits yearly or as often as the dentist directs would be the basic procedure. Since conditions vary so, and since half of our high schools are in rural areas, the administrator might take action by setting up a dental health committee as part of the larger Health Council. This committee would consist of community representatives in addition to school, student and dental representatives so that education, prevention, and treatment will be acceptable phases of the program. This committee's work could range from the simple tasks to difficult ones such as making an offer for a dentist to settle in their town, providing funds for one of the local students to study dentistry, or arranging for a mobile dental unit to come into the community. In the urban centers, the committee could make plans which would result in many and varied types of dental programs, which would

aim to accomplish the objectives of dental health which have been outlined."

The remaining three points deal in order with the advisability of excusing students from class for dental treatment due to the great incidence of caries, the benefits other than improved personal dental health accruing in dental health education programs and where educators may secure dental health education materials. Dr. Kramer stresses that in addition to such material as may be available through local health agencies, the American Dental Association, 222 East Superior Street, Chicago 11, Illinois, will consider all dental health education problems which can be defended scientifically and will help to solve them. Abstracted by John L. Murphy.

* * * * *

Television and Eye Strain,—To The Editor—Does Television produce eye strain? Is a small screen superior to a large screen? Is a distance of 10 feet better than a shorter one, Should the screen be viewed perpendicularly and not at any angle? Is there a time limit for television viewing? Are daylight screens better than the ordinary ones?—Paul C. Craig M.D., Reading, Pa.

Answer—1. Television in itself does not produce eye strain; however, since it requires the utilization of all the important components of the visual act, such as convergence, accommodation and fusion, patients often complain of fatigue after relatively short periods. This is particularly true if there are any defects in any of the mentioned mechanisms.

2. In general, a large screen is considered to be better than a small one, because it allows clearer vision at a greater distance and gives a larger visual angle.

3. A distance of 10 feet or more would, in general, be better than a shorter distance, provided the size of the screen and room would permit.

4. The nearer perpendicular, the better. Too much of an angle produces distortion and makes fusion difficult.

5. There is no definite time limit; however some discretion should be used, and it should not be persisted in beyond the point of fatigue.

6. Daylight screens, in general, are considered to be better because they are compatible with more light in the room, thus reducing the contrast between screen and surrounding objects.—Journal of American Medical Association, April 23, 1949. Page 1237.

* * * * *

Vitamin C and Tomatoes,—Why do tomatoes from different localities vary so much in vitamin C content? It was first assumed

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that variations in soil fertility levels and cultural practices affected the vitamin C value, but a recent series of experiments prove that these factors have little or no effect at all. To prove this point, tomato plants were grown in pure solution cultures with the supply of each mineral nutrient carefully regulated. Amounts of essential mineral elements ranging from deficient to excessive were used. Some plants were grown in soil from various sources, some fertilized with different quantities of nitrogen, potash and phosphate. These experiments showed extreme variations in the size of the plants and the crop yield; but the vitamin C content of the fruit from all treatments averaged very nearly the same.

Tomatoes of the same variety when grown in different parts of the United States showed a marked difference in vitamin C content; but when soil from those areas were brought to Ithaca, New York, and tomatoes grown in it, the vitamin C content was no different than any other tomato plant grown in the New York area.

These results indicated, first, that soil factors were probably of minor importance in influencing the vitamin C content in tomatoes, and, second, that climatic factors associated with season and location were probably of primary importance.

Plants were grown in rooms where temperature, humidity, and various light factors could be controlled. By varying one factor at a time, it was found that temperature and humidity were of minor importance but the amount of light was effective in causing changes in vitamin C level. Finally, it was definitely ascertained that the amount of illumination upon the individual fruits was the deciding factor in this variation of vitamin C content.—*R.G.F.* (Abstract from *"California's Health,"* California Department of Public Health.)

* * * * *

Our Greatest Child Health Problem,—A statistical summary of some of the important causes of death at school age, 1945-1946, gives the lie to recent irresponsible statements concerning the health conditions of our children. A recent release from what should certainly be considered an unimpeachable source (National Office of Vital Statistics) again clearly shows that the greatest problem is continuously and increasingly one of accident prevention. "In a total of 32,960 deaths from all causes in 1946 among persons 5 to 19 years old, 12,342 or 37 per cent of all deaths were caused by accidents as compared to 35 per cent in 1945 and 34 per cent in 1941, the last prewar year". Deaths from accidents among children, 5 to 9 years of age, were three times as numerous as the combined number of deaths from poliomyelitis and pneumonia, the greatest nonaccidental killers and perhaps the most feared of childhood diseases. In the 10 to 14 age group accidents outranked diseases of the heart, the single greatest nonaccidental cause of death, 3,153 to 656, or nearly 5 to 1. Even among young persons 15 to 19 years of age, when tuberculosis is the greatest cause of fatality with heart disease and pneumonia next in line, accidents accounted for nearly twice as many deaths as the three together. In an analysis of mortality figures, A. D. Battery, senior statistician for the National Safety Council, summarizes in an accompanying article as follows:

Among school children 5 to 14 years old, preventive medicine has proved its effective power. In 1930, 19 out of 100,000 of these children died of pneumonia and influenza; in 1946, only 5 out of 100,000 died of these diseases. In 1930, 12 out of 100,000 died of tuberculosis; in 1946, fewer than 4. In 1930, 13 out of 100,000 died of appendicitis, and 12 of heart disease; in 1946, only 2 out of 100,000 died of appendicitis and 5 of heart disease.

In 1930, 36 out of 100,000 children, 5 to 14 years old, died of accidents; in 1946, 29, an improvement of only 19 per cent. This

relatively small decrease indicates the need for more effective work in the field of accident prevention.

Our present major problems in reduction of mortality for these age levels are: (a) improved programs of accident prevention; (b) bettered public health programs and facilities for the prevention, diagnosis and treatment of tuberculosis; (c) research into the causes and control of the greatest killers such as heart disease, cancer and poliomyelitis, and (d) education of the public to early use of available facilities for care of these conditions. Obviously these programs of safety, public health, research and education must be widely implemented before further progress can be achieved through medical care. Significantly enough, the medical profession, through its national, state and local associations and societies, for years has been doing everything possible to effectuate these programs. Here are established needs, well defined areas in preventive medicine in which government—national, state and local—has broad responsibilities and in which complete cooperation by the medical profession is assured. Journal—American Medical Association, February 26, 1949. Page 588.

* * * * *

Are Medical Care Prices Excessive?—The following is a comparison of the final 1948 Consumers' Price Index with the preliminary index of medical care prices of the United States Bureau of Labor Statistics. The entire cost of living index was 171.2 for 1948; the Bureau of Medical Economic Research of the American Medical Association estimates that the index of medical care prices, a small part of this cost of living index, will be only 141 for 1948. The base period 1935-1939 equals 100. This spread of 30 points compares with a spread of 27.6 points in 1947—159.2 and 131.6.

Again it appears certain that the prices charged by the physicians, dentists and hospitals for rooms have not risen as fast as the cost of living. These figures were developed by an agency of the federal government. These data clearly show that the cost of living in 1948 was much higher than the level of prices which the American people were paying for the various medical care items sampled by the field representatives of the United States Bureau of Labor Statistics.

The index for hospital room rates will probably be 212 for 1948 as compared with 179.6 in 1947. This high index of 212 is included in the general medical care index of 141; if it were not included, the latter would be much below 141. Actually the hospital is a buying and selling institution. Since it buys goods and services

and sells them soon after purchase in the form of services to patients, the hospital cannot escape contemporary inflation.

These estimates should set at rest a good many wild and irresponsible statements about the exorbitantly high prices being paid for medical care. The statements are simply untrue if we are to be guided by the well known cost of living index of the United States Department of Labor. Physicians generally may not realize that this cost of living index is widely used in the United States as a basic formula for wage adjustment. Editorial, Journal American Medical Association February 26, 1949, Page 587.

* * * * *

Toothbrush Study,—One such study was reported in a recent issue of the *Journal of the American Dental Association.* In this survey, new toothbrushes were offered to a selected group of American families who sent in the toothbrushes then in use by the various members. Almost 2,000 families participated, with an average of 4.2 brushes per family. Since there were slightly less than four persons per family, it might be assumed that each member of the family possessed a toothbrush. Examination of the toothbrushes indicated, however, that many of them were being used for purposes other than brushing of the teeth.

Out of a total of 8,176 toothbrushes which were received in the survey, 6,596, or about 80 per cent, were found to be unsatisfactory for one reason or another. Bent or broken bristles were the most frequent cause for rejecting the brushes; matted bristles were the second most important cause; and unsanitary condition the least important. It should be noted, however, that 1,645 toothbrushes were found to be unsatisfactory because of caked dentrifices and food debris at the base of the bristles.

Certainly, these figures demonstrate conclusively the need for better care and more frequent replacement of toothbrushes. From Illinois Health Messenger, March, 1949.

* * * * *

Diphtheria Death Rate in Nation,—The recent report from the American Medical Association on diphtheria shows that for the 88 cities of 100,000 or more population, for which the report is complete, the diphtheria death rate for these cities has been pushed down from 13.13 per 100,000 in 1923 to 0.53 per 100,000 in 1947. April 1949, Public Health News, N. J.

Body Weight and Maximum Stature,—The Quartermaster Corps has completed an anthropometric survey of Army men and women to determine the average weight and measurements for different groups. The purpose was to obtain data with which to revise the range of clothing sizes issued and to prepare for the induction of young men under the new draft law. Studies were made of more than 17,000 men between 17 and 26 years of age, some of whom were being inducted into the service and others being discharged from the service. The average mean stature of the 17 year-olds was 67.71 inches (172 cm.) and the average weight 139.5 pounds (63.3 Kg.) After one or two years of service in the Army these averages increased. The mean maximum stature of 68.51 inches (174 cm.) was attained at the age of 21; however, after the age of 19 years the average increase was only 0.1 inch (0.25 cm). The chest circumference for the 17 year-olds averaged 34.5 inches (87.6 cm.) and for the 26 year-olds 36.76 inches (93.4 cm). The neck, judging from these measuremetns, appears to stabilize in the twenty-fourth year.. Of the extremities, the only one which showed an increase after 17 years of age was in the breadth of the hands, which showed an average increase of 2 per cent between 19 and 22 years of age.

The Quartermaster data for the 17 year-olds were compared with similar data obtained by the Brush Foundation over a ten year period at Western Reserve University, Cleveland. The first period of the Brush Foundation studies covered less than a thousand persons representing the economic group for which the average stature at age 17 was 69.48 inches (176.5 cm.) and the mean average weight 147.5 pounds (66.9 Kg.). Since the Army series at age 19, after one or two years of service, show a mean weight averaging about that of the Brush series, the Quartermaster Corps concludes that military diet and environment are beneficial to the group. The study indicates also that the general population is capable of attaining at least as much weight as the "well born" persons, providing it is given the opportunity. Journal American Medical Association, July 31, 1948, Page 1232.

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"The Health Educator's Bookshelf," *George Rosen, M.D., Ph.D.*, American Journal Public Health, April, 1949, page 433, contains a list of 118 books and periodicals in the field of Health Education.

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School Lunch Bibliography,—Among the foods donated from Government purchases to school lunch programs are certain nutri-

tious but less familiar foods such as dried eggs and dry milk. Or they may include potatoes, dried fruits, or some other food which is locally in good supply—foods better known to meal planners and cooks.

But none of these foods need bring problems to the school lunchroom. Tasty, new recipes are called for, it's true. And such recipes—specifically planned to fit school lunch nutrition standards—can be had for the asking. They are the result of work in the school lunch laboratory kitchen of the U. S. Department of Agriculture's Bureau of Human Nutrition and Home Economics.

Recipes, aimed at children's food likes, get large-quantity cooking tests in the same amounts school lunch cooks must also use. Trained food specialists taste and judge the finished product. But there's an important final test—preparation in a real school lunchroom to check the reaction of both the cooks and the youngsters.

Not recipes alone but the results of study on equipment, food quantities, and cost estimates are in print for the use of all concerned with school lunch management. List of school lunch publications follows. They may be obtained by writing your State Department of Education:

1. *A Yardstick for School Lunches.* PA-50. August 1944.
2. *Handbook for Workers in School Lunch Programs.* NFC-3. August 1943.
3. *Suggested Outline for Training School Lunch Workers.* May 1948.
4. *School Lunch Facilities—One-Room School.* April 1946.
5. *Small Equipment for the School Lunch.* June 1947.
6. *Planning and Equipping School Lunchrooms.* PA-60. August 1948.
7. *Estimating the Cost of Food for a School Lunch.* PA-53. July 1948.
8. *Quantities of Food for Serving School Lunches.* PA-45. July 1947.
9. *School Lunch Recipes for* 100 (*recipe file cards*). Distribution limited to persons operating school-lunch programs. Others may purchase for $1 from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.
10. *School Lunch Recipes Using Potatoes.* PA-36. January 1948.
11. *School Lunch Recipes Using Nonfat Dry Milk.* PA-44. April 1948.
12. *School Lunch Recipes Using Dried Whole Eggs.* PA-58. August 1948.
13. *School Lunch Recipes Using Dried Fruits.* PA-57. August 1948.

—By Roberta Clark, Information Specialist, Bureau of Human Nutrition and Home Economics.
—From School Life, March 1949, page 10.

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MEETINGS

New York State Association of School Physicians, June 20, 1949, Lake Placid, N. Y.

The **American School Health Association** and the American Public Health Association, New York, N. Y., October 23-28, 1949.